

Worksheet : Maths

Class: XII

- Q1.** The domain of the function $f(x) = \sqrt{\frac{(x+1)(x-3)}{x-2}}$ is: 1
 a) $[-1, 2) \cup [3, \infty)$ b) $[-1, 3) \cup [3, \infty)$ c) $[-1, 4) \cup [3, \infty)$ d) None of these
- Q2.** If $x \neq 1$ and $f(x) = \frac{x+1}{x-1}$ is real function, then $f(f(2))$ is: 1
 a) 1 b) 2 c) 3 d) 4
- Q3.** The maximum value of $\sin^2(120 + \theta) + \sin^2(120 - \theta)$ is: 1
 a) $\frac{1}{2}$ b) $\frac{3}{2}$ c) $\frac{1}{4}$ d) $\frac{3}{4}$
- Q4.** The smallest positive angle which satisfies the equation $2\sin^2\theta + \sqrt{3}\cos\theta + 1 = 0$ is: 1
 a) $\frac{5\pi}{6}$ b) $\frac{2\pi}{3}$ c) $\frac{\pi}{3}$ d) $\frac{\pi}{6}$
- Q5.** ${}^{15}C_{3r} = {}^{15}C_{r+3}$ then r is equal to: 1
 a) 10 b) 4 c) 3 d) 2
- Q6.** In how many ways can a committee of 5 be made out of 6 men and 4 women containing at least one woman? 1
 a) 246 b) 222 c) 186 d) None of these
- Q7.** The product $(32) \times (32)^{1/6} \times (32)^{1/36} \dots$ to ∞ equal to: 1
 a) 64 b) 16 c) 32 d) 0
- Q8.** The line segment joining the points $(-3, -4)$ and $(1, -2)$ is divided by y axis in the ratio: 1
 a) 1 : 3 b) 2 : 3 c) 3 : 1 d) 3 : 2
- Q9.** The equation $x^2 + y^2 + 2x - 4y + 5 = 0$ represents: 1
 a) a point b) pair of straight lines c) a circle d) None of these
- Q10.** $\lim_{x \rightarrow 0} \frac{\sin x}{x}$ is equal to: 1
 a) 1 b) π c) x d) $\frac{\pi}{180}$
- Q11.** $\lim_{x \rightarrow 0} \frac{1 - \cos 2x}{x}$ is: 1
 a) 0 b) 1 c) 2 d) 4
- Q12.** $\lim_{x \rightarrow 0} \left(\frac{\sin^3 2x}{\sin^3 3x} \right)$ 1
 a) $\frac{2}{3}$ b) $\frac{8}{27}$ c) 1 d) $\frac{3}{2}$
- Q13.** $\lim_{\theta \rightarrow 0} \left(\frac{1 - \cos 4\theta}{\theta^2} \right)$ 1
 a) 0 b) 2 c) 1 d) None of these
- Q14.** A bag contains 3 red, 4 white and 5 blue balls. All balls are different. Two balls are drawn at random. The probability that they are different colour is: 1
 a) $\frac{47}{66}$ b) $\frac{10}{33}$ c) $\frac{1}{3}$ d) 1
- Q15.** The probability that a leap year will have 53 Fridays or 53 Saturdays is: 1
 a) $\frac{2}{7}$ b) $\frac{3}{7}$ c) $\frac{4}{7}$ d) $\frac{1}{7}$